the central cavity of the spring inflorescence. The staminate flowers, set in a ring round the outlet, are now ripe, and the issuing female gets dusted by their pollen. Then she flies to the immature figs of the summer generation (we are still speaking of the wild fig-tree), which contain only female flowers. In her fruitless search for gall-flowers in which to lay her eggs, she pollinates the female flowers. So many Blastophagas are deceived by appearances that whenever a wild fig-tree is shaken in July or August, swarms of the flies come out of the summer figs. Is it possible that they procure food for themselves there?

Ravasini shows that in the wild fig-tree there are only two sets of gall-flowers, one in the wintering, another in the spring inflorescences. He believes that there are also only two sets of Blastophagas, answering to the two sets of gall-flowers. One female Blastophaga may suffice for an entire inflorescence, so that there is a great superfluity of insects.

In October the wintering inflorescences are ready, and the later-hatched Blastophagas of the spring generation enter them to lay their eggs in the gall-flowers. The life-cycle of the insect is thus completed.

We must now add a few words about cultivated fig-trees.

When men began to plant wild fig-trees in their gardens, they would, of course, propagate them by cuttings. Now cuttings of the wild fig-tree are found to reproduce the characters of the *branches* from which they were taken. By taking cuttings from branches destined to bear spring inflorescences, trees have been produced in which only the spring inflorescences regularly attain complete maturity; these trees are Caprifigs (goat-figs), which are practically male. In the same way, by using as the parent stock branches which bear summer inflorescences, trees have been produced which are entirely female. Of these two the caprifig alone is capable of harbouring the insect guest during its growth period.

Two fig-trees, very different in appearance and function, have thus been developed by the action of man out of the single primitive stock; they are often called *varieties,* but Tschirch and Ravasini show that they are really *artificially produced sexual forms* of one and the same natural species, viz. of the wild fig-tree. One proof is that seeds of the cultivated fig-tree produce either caprifigs or inferior fruiting figs. A further proof is yielded by the fact that the female Blastophaga, when laden with eggs, can only fly a very short distance. Hence we infer that she is adapted to a monœcious fig-tree, in which all the forms of inflorescence are to be found on one tree. The cultivated fig-tree is practically 'diœcious, and without artificial pollination ripens no seed. Only one monœcious tree is known, which can be regarded as a possible common ancestor of the two interfertile forms, caprifig and fruiting cultivated fig; this common ancestor is the wild fig-tree.

Fig-cultivators must have become early acquainted with the Blastophaga and the effects of its visits, for the female flowers of the fig remain unfertilised if no Blastophaga enters them, and unfertilised female inflorescences (in unimproved fig-trees) fall off prematurely. To prevent such failures, the expedient was successfully tried (ages ago) of fastening to the female trees ripe staminate inflorescences of the wild fig-trees. Blastophagas and pollen were thus supplied together, and the female inflorescences duly ripened. In course of time the inflorescences of the wild fig-tree were replaced by those of the caprifig, which answer the same purpose, and are easily raised on the spot. Thus arose the practice of "caprification," which is essential to the production of the best keeping or drying figs.

The dried figs of commerce, which are all seed-bearing, absolutely require fertilisation by the Blastophaga, and this is most easily secured by caprification. But if only *fresh* edible fruits are desired, caprification may be dispensed with. By long-continued selection it has been found possible to create varieties in which the unfertilised figs do not fall off prematurely, but develop into a valuable fruit. The large, non-seeding, sweet and juicy table-figs of north and mid-Italy require no pollination at all. Ravasini calls this the greatest triumph of fig-culture.

We have not explained all that we should like to explain, but enough, we hope, to send some of our readers to "Die Feigenbäume Italiens," and to make them look out for the further experiments which Dr. Ravasini promises.

L. C. M.

NOTES.

THE next meeting of the International Union for Solar Research will be held at Bonn on Friday, August 1, 1913, and succeeding days.

A REUTER message from Stockholm announces that the Swedish Royal Academy of Sciences has awarded the Nobel prize for physics for 1912 to M. Gustaf Dalen, a Swiss engineer, the head of the Stockholm Gas Company, and the prize for chemistry has been divided between Prof. Grignard, of Nancy University, and Prof. Sabatier, of Toulouse University.

THE council of the Royal Scottish Geographical Society has resolved to award the Livingstone gold medal to Captain Roald Amundsen and the society's silver medal to Captain Egnar Mikkelsen, the leader of the Danish expedition to north-eastern Greenland, in recognition of their services to geographical science.

WE are glad to learn that the Chilean Government has sent instructions to the Chilean authorities at Easter Island to afford every assistance in their power to the expedition organised and led by Mr. and Mrs. W. Scoresby Routledge. The main object of this carefully planned and well-equipped expedition is to make a topographical and archæological survey of Easter Island, the most remote of Polynesian islands, which is famous for its megalithic monuments, of which visitors to the British Museum have seen examples in the portico. There are many problems of extreme interest concerning the culture of the natives, of whom it is said no pure-bred descendants now exist. Mr. Routledge and his colleagues have a most fascinating field for research, and we wish them every success.

WE regret to notice the death, in his eighty-first year, on November 6, at the University of Virginia, U.S.A., of Prof. J. W. Mallet, F.R.S., professor of chemistry in the University, and joint author, with his father, of the British Association catalogue of earthquakes.

THE death is announced, at the age of ninety years, of M. Aimé Pagnoul, a French authority on agricultural chemistry. In 1869 M. Pagnoul organised the agricultural station of the Pas-de-Calais, of which he was director until 1899; and in 1894 he was elected a correspondant of the Paris Academy of Sciences in the section of rural economy.

THE Decimal Association announces that a large majority of American jewellers has agreed to adopt the metric carat of 200 milligrams as from July 1, 1913. A committee has been formed to promulgate the passage of a law making the metric carat effective throughout the country. It is probable that the adoption of this new carat by the jewellers of the United States will hasten its introduction here.

THE 159th session of the Royal Society of Arts will be opened on Wednesday evening, November 20, by Lord Sanderson, G.C.B., K.C.M.G., chairman of the council, who will deliver an address and distribute the medals awarded last session. Mr. A. Zimmermann will describe "The Manufacture of Sugar from Wood, and its Economic Importance," on December 4, and Dr. F. Mollwo Perkin will read a paper on synthetic rubber on December 11. In the Colonial Section, Prof. W. H. Warren will describe "The Hardwood Timbers of New South Wales" on November 26. A course of Cantor lectures will also be delivered by Mr. C. R. Darling on "Methods of Economising Heat" on Mondays, December 2, 9, and 16.

THE following is a list of those who have been recommended by the president and council of the Royal Society for election into the council for the year 1913 at the anniversary meeting on November 30:—*President,* Sir Archibald Geikie, K.C.B.; *Treasurer,* Sir Alfred B. Kempe; *Secretaries,* Sir John Bradford, K.C.M.G., Prof. A. Schuster; *Foreign Secretary,* Dr. D. H. Scott; *Other Members of the Council,* Lieut.-Col. A. W. Alcock, the Right Hon. A. J. Balfour, Sir William Crookes, O.M., Dr. F. W. Dyson, Prof. W. Gowland, Sir Joseph Larmor, Prof. E. W. MacBride, Mr. W. B. Hardy, Prof. Micaiah J. M. Hill, Sir Ronald Ross, K.C.B., Prof. G. Elliot Smith, Prof. A. Smithells, Dr. J. J. Harris Teall, Prof. Silvanus P. Thompson, Prof. Sir J. J. Thomson, Sir Philip Watts, K.C.B.

THE Zoological Society of Los Angeles, California, was established in August, 1911, to further the project of starting a collection of wild animals in Griffith Park in that city, and we are glad to learn from the first number of its Proceedings that the idea has already taken practical shape. The necessary funds are being raised by private subscription, aided by a substantial grant from the City Council. Judging from the description, the site and climate seem to offer ideal conditions for the exhibition and preservation of animals in extensive ranges, varying in area from fifteen to one hundred and twenty-five acres. To this is to be added a marine aquarium to be placed on the sea-front on the cliffs skirting the base of San Pedro Hill. To zoologists will be especially welcome the announcement that although the animals are to be kept primarily as part of the park system for the pleasure and instruction of the people, a special feature of the institution will be a prosectorial department, where the anatomy and pathology of the dead animals may be investigated. We heartily wish the project all success.

A COPY of the programme for 1912 of the Société Batave de Philosophie expérimentale de Rotterdam has been received. The gold medal of the society, or its value in money, as the successful candidate may determine, will be awarded to each candidate whose paper on a scientific question proposed by the society is considered most satisfactory by a general meeting of members. The programme includes some forty-five questions to which competitors may address themselves. The general character of the inquiries proposed by the society may be gathered to some extent from the following examples: an anatomical and physiological description of one or more species of a family of plants which up to the present has not been examined satisfactorily in this way; magnetic variations and disturbances; an exact and critical review of our present knowledge of the volcanoes and volcanic phenomena in the East Indies; an experimental research into the thermoelectric properties of some metallic alloys, with special reference to the influence of the composition of the alloy; a study of the origin, physiological significance of the green colouring matter in the bodies of certain animals, structure and development of a species of trypanosome, &c. The theses may be written in Dutch, French, German, or English, and should be in the hands of the secretary of the society by February 1, 1914.

ON November 7, a conference of museum curators and others interested in museum work was held at the Manchester Museum. Mr. H. W. Freston, chairman of the Manchester Museum Standing Committee, presided, and representatives from twenty-eight museums were present. In a paper on pigmy flint implements, Mr. W. H. Sutcliffe, of Rochdale, maintained the opinion that the shouldered type of these implements was used by Neolithic man to form a kind of carding tool, by fixing numbers of them up to the shoulder in a wooden stock, with which the muscle fibres and sinews adhering to skins used for clothing could be teased and loosened after curing, the skin being rendered by this means soft, pliable, and capable of being made into close-fitting garments. The chief opposition to this theory was based on the grounds (1) that no trace of wooden stock had ever been found with pigmy flints; (2) that only a small percentage of the flints showed any signs of wear or usage; (3) that the fine sharp points of the majority suggested their use for some such purpose as tattooing. Mr. Sutcliffe replied to these objections as follows:—(1) That, from the analogy of other Neolithic implements, such as hammers and axes, in which the use of a wooden haft was postulated, though traces of such a haft were seldom found, the objection on this ground failed; (2) that in his experience 46 per cent. of the flints were blunted and worn; and (3) they were much more numerous than one would expect tattooing implements to be.

THE Smithsonian Institution has just issued three papers describing further new material collected during the biological survey of the Panama Canal zone, including new insects, mammals, and birds. This survey was inaugurated in 1910 and carried on for two seasons. Early this year Mr. E. A. Goldman, of the Biological Survey, U.S. Department of Agriculture, went to Panama for the second time and made additional collections of mammals. The collection of natural history specimens, which includes some 800 birds and 595 mammals, indicates that the fauna of eastern Panama is South American in its general characteristics. The new birds of the region have been described by Mr. E. W. Nelson in a pamphlet entitled "Descriptions of New Genera, Species, and Subspecies of Birds from Panama, Colombia, and Ecuador." Many of the specimens were collected by Mr. Goldman, who seems to have been the first zoological collector to have penetrated the forests about Mount Pirri and its bordering lowlands. Here many birds and mammals not before known from Panama were taken, a number of which were also new to science. Several species of South American animals appear to reach their northern limit at this point, being unknown in the Canal zone and the adjacent territory, although only about 150 miles distant. Mr. J. R. Malloch, of the Bureau of Entomology, Department of Agriculture, has written a technical description of three new species of Diptera from Panama. The three papers just issued are Publications Nos. 2141 to 2143 in the Smithsonian Miscellaneous Collections.

A RECENT number of the "Annals of Tropical Medicine and Parasitology" (vol. vi., No. 3) contains a memoir by Drs. J. G. Thomson and J. A. Sinton on the morphology of *Trypanosoma gambiense* and *T. rhodesiense* in cultures, with a comparison between the cultural forms and those known to occur in the natural development that takes places in the tsetse-fly (*Glossina palpalis*). The life-history of these trypanosomes in culture-tubes was found to be similar to that which occurs in the gut of the insect-host. An interesting parallel with the natural development was further shown in the fact that the cultures of the trypanosomes quickly lose their infectivity, and after the third day are not infective to rats by intraperitoneal injection. In the cultures the trypanosomes do not regain the infectivity which in tsetse-flies they acquire again by passing into the salivary glands of the fly. The authors found no evidence of a sexual cycle, although the so-called "male" and "female" forms are present in the cultures.

FROM a small guide book compiled by Mr. T. Sheppard, we learn that the town of Scunthorpe, Lincolnshire, situated in the heart of the ironstone district, possesses a small museum, which is specially devoted to local palæontology, antiquities, and natural history. The guide contains illustrations of ironstone fossils, prehistoric implements, and ancient Roman vases.

FROM the report of the Inspector of the Eastern Sea Fisheries for the year ending September 12, it appears that during the period under review not only has the catch been for the most part unsatisfactory—largely owing to bad weather—but that on the Norfolk and Suffolk coast foreign trawlers are alleged to have approached too near the land, while on the Lincolnshire coast several steam-trawlers are stated to have run the risk of being caught at work within the territorial limit. As complaints are rife—as, for instance, at Torbay—with regard to the depletion of fisheries by our own trawlers, it is only justice to our fishermen that they should be adequately protected from foreign poaching.

THE first volume of the second series of the Memoirs of the American Museum of Natural History commences with a description by Prof. H. F. Osborn of the skull of the gigantic theropod dinosaur *Tyrannosaurus rex*, from the Upper Cretaceous of Montana, together with notes on the skulls of Allosaurus and the Theropoda in general. The skull of Tyrannosaurus, which is furnished with a formidable armature of teeth of the megalosaurian type, is not only the largest in the theropod order, but, speaking generally, is also the most powerful and massive among reptiles as a whole; this may be verified by the inspection of a cast exhibited in the fossil reptile gallery at the Natural History Museum. A noteworthy feature is the fusion of the vomers into a single diamond-shaped plate, articulating posteriorly by a long style with the pterygoids, since a practically identical structure exists in the ostrich group. As an adaptive modification correlated with the powerful dentition, attention is specially directed to the antero-posterior shortening of the skull and the reduction of the number of pairs of teeth from twenty (in Allosaurus) to sixteen. This abbreviation of the skull is paralleled among modern cats and certain extinct dog-like carnivores. The homology of certain bones of the theropod skull is also discussed. In a second article in the same issue Prof. Osborn describes in detail, with photographic illustrations, the skin of the iguanodont dinosaur *Trachodon annectans*, from the Upper Cretaceous of Wyoming, as preserved in a "mummified" skeleton. Since reference was made last year in NATURE to a preliminary account of this wonderful specimen, further notice is unnecessary.

WE have received four parts of the zoological reports on the collections made by the Duke of Orleans in his Arctic expedition on the *Belgica* in 1907. ("Campagne Arctique de 1907." Duc d'Orléans. Bruxelles: C. Bulens, 1911–12.) The Siberian Sea, along the coast of Nova Zembla, has not been much explored, and these handsomely got-up volumes contain many interesting records and descriptions. Dr. Louis Stappers deals with the higher Crustaceans, and attention may be directed to the very fine figures illustrating species of Leptostylis. Prof. Pierre Fauvel reports on the Annelids, of which fifty-two species were collected. It is interesting to notice that only one of these was new, namely *Sphaerodorum philippi*. It appears that almost all the boreal Annelids are represented throughout the circumpolar area, and it is remarkable that some occur so far south as the Azores, the Mediterranean, and the Indian Ocean. The Bryozoa are discussed by O. Nordgaard, who reports the occurrence of sixty species in the Kara Sea alone. From a single station twenty-seven species were obtained, and the abundance of superb specimens of *Reticulipora (Diastopora) intricaria* is a conspicuous feature in many places. It seems that Bryozoa flourish particularly well in localities with a rapid current and abundant plankton organisms. The great majority of the species collected by the *Belgica* are distinctively Arctic, a number are boreal, three are almost cosmopolitan. Dr. Hjalmar Broch reports on the Cœlentera—twenty-six Hydroids, five Alcyonarians, and two sea-anemones. In some cases the occurrence is of great interest as regards the geographical distribution of the species. Thus *Eunephthya clavata*, reported from the Kara Sea, has also been recorded from the Azores.

A REPORT on the structure and development of crown gall, a plant cancer, by Mr. E. F. Smith and Misses N. A. Brown and L. McCulloch, has been issued by the U.S. Department of Agriculture (Bureau of Plant Industry, Bull. 255). The disease attacks a variety of plants, is infectious, and is caused by bacteria, either one polymorphic species, or several closely related species. A full description of the organism, named the *B. tumefaciens*, and of its cultural and biological characters is given. The development of the disease is regarded as closely simulating what takes place in cancer of man and animals, though metastases do not occur, and, of course, this disease of plants has nothing to do with mammalian cancer. The report is illustrated with no fewer than 109 full-page half-tone plates.

FROM Dr. C. R. Wieland we have received reprints of four papers contributed to *The American Journal of Science*, containing the results of his further observations on the fossil Cycads, and thus forming a supplement to his great work on "American Fossil Cycads," published in 1906. In a note on seed structure in the Cycadeoideæ (Bennettitales), the author remarks that the seed and embryo of these Mesozoic forms are of the most generalised gymnospermous type, while their retention of pronounced cycadofilicinean features further favours inclusion in the Cycadales; apparently the primitive seed characters of the Cycadeoideæ were only slightly obscured by appression in the cone type of fructification, and were by this very appression so much the more surely conserved as to permit free comparison with the ancestral singly-borne leafy seeds of the Palæozoic forms. Another note is devoted to the mature but pigmy flowers of *Cycadeoidea Marshiana*, and to a discussion of the probable relationships between Cycadeoideæ, Cycads, Cycadofilices, and Gnetales. A third paper deals with the author's own examination of certain historic fossil Cycads described by earlier writers; while the fourth contains a general review of the Williamsonia and Cycadeoidea tribe, with special reference to types recently discovered in Europe, and a provisional classification of the forms now known.

THE Patent Office has isued part i. of a "Subject List of Works on Mineral Industries" (Darling and Son, price 6*d*.), which shows how much good material is available for public consultation in the library in Chancery Lane, London. In this part the geological sciences and coal mining are included, and mineral industries and practical mining come under these heads. The detailed classification adopted prevents the ready discovery of books on a given subject, since several headings may be consulted in vain before the right one is discovered. Rutley's "Felsitic Lavas" thus appears under "Lavas" and not also under "Petrology"; his Brent Tor memoir is found under "Petrology, Igneous Rocks," and not also under "Geology, Descriptive, Devonshire." The division of geology into economic, descriptive, and stratigraphic renders the publications of geological surveys extremely hard to classify. A few repetitions and cross-references are conveniently introduced; but the memoirs on the South Wales coalfield appear under none of the above headings, not even under "Economic—local—Wales," but only under "Coal, Distribution." Hardman's memoir on the Leinster coalfield seems to have no separate mention, and there is no heading "Carboniferous" under "Geology, Stratigraphic." The miner comes off somewhat better, with good lists of works on nitrates, phosphates, &c.; but a far broader classification, with subheadings alphabetically arranged, will be of much service to the reader when the list is next revised.

THE aggravating contrast between the heavy rainfall on the rugged eastern highlands of Australia and the arid climate of the rich-soiled plains to the west has led to many projects for the more useful distribution of the water. The most important scheme in New South Wales is that for collecting the winter floods of the Murrumbidgee River for use during the summer by the construction of a vast reservoir with a dam 240 ft. in height. The reservoir will be one of the greatest in the world, as it will hold 33,000,000,000 cubic feet of water, or a greater amount than that contained in Sydney Harbour. The water will be conducted by channels, which may amount to 1000 miles in length, and be used for the irrigation of a large area more than 100 miles to the west. The reservoir is in a locality hitherto known as Barren Jack; this is a corruption of an aboriginal name, Burrinjuck, which has been officially adopted. The New South Wales Government is advertising for applicants for the land which can thus be brought into cultivation, and has issued a pamphlet, by Mr. L. A. B. Wade, the chief engineer for irrigation and drainage, on the progress of the work.

THE *Mitteilungen* from German Protectorates (vol. xxv., part 3, 1912) contain the monthly and yearly summaries of the meteorological observations at stations of the second order, and at the rainfall stations in Togoland (equatorial West Africa) for the year 1911. The summaries have been very carefully prepared by Dr. P. Heidke, of the Deutsche Seewarte, and include in the accompanying text much valuable information relating to the climate of that district. It is satisfactory to note that the observers take much interest in their work; at many stations they have considerably exceeded what was required of them.

No better evidence of the paucity of scientific knowledge amongst Englishmen supposed to be well educated has ever been afforded than was given in the House of Commons during the discussion of the Bill for the adoption of the metric system five years ago. A responsible Minister of the Crown then stated that "the metric system had broken down in France," and the House appears to have believed him. To those whose information on the subject is not up to date, an article by Dr. C. E. Guillaume in the *Revue générale des Sciences* for October 15 will be of great value. It shows that the other systems have almost entirely disappeared, the only ones at present in use being the Anglo-Saxon, the Russian, and the Japanese, while Japan has recently adopted the decimal system with a view to further reform in the near future. Australia, New Zealand, and South Africa are anxious that the British Empire should adopt the system, and it begins to look as if the Mother Country would be left in sole possession of a system which the average man finds so difficult to remember that he cannot say how many multiples a pound or an ounce is of a grain, or a mile of a yard, or what is the definition of a gallon.

THE Proceedings of the University of Durham Philosophical Society for 1911–12 (vol. iv., Pt. 4) contains the following papers:—The stability of a floating triangular prism, Mr. F. H. Alexander; the effect of soil aëration on plant growth, Mr. C. Hunter; chemical reactions taking place at the kathode and anode during the electrolysis of simple salt solutions, Dr. J. H. Patterson; the preparation of benzyl mercaptan, Dr. J. A. Smythe; the preparation of acrylic ester, Dr. F. G. Trobridge; some para derivatives of phenylacetic acid, Mr. S. Robson; analysis of a Florida Clay, Dr. A. A. Hall; and the rate of fermentation as measured by difference of potential, Dr. M. C. Potter. The society includes 171 members, and held 21 meetings, at which 26 papers were read, during the session 1911–12. The sixth report of the Boulders Committee is printed in the present issue of the Proceedings.

MR. ROBERT ELLIOTT-COOPER'S presidential address to the Institution of Civil Engineers is largely composed of an interesting discussion of the labours of the civil engineer in the oversea dominions of the British Empire. Dealing with the Grand Trunk Pacific Railway in Canada, while there is much to admire in this huge undertaking and its accessories, there is one matter which will not find general acceptance in these days of picturesque town-planning, except perhaps from those who think, with Ruskin, that railways and æstheticism are absolutely irreconcilable. The new townships which have been and are about to be established along the undeveloped lengths of the new line are, as nearly as possible, eight miles apart, centre to centre, and are all on the northern side of the railway. In each town is one main street, named so in every case, 80 ft. wide, and leading up to the precise centre of the station, while there are 60-ft. streets at exactly equal distances apart on a chess-board pattern, completing a perfect square. A few of these perhaps would not affect the traveller much, but, when 1000 miles covering 125 towns of this description are passed, it will take all the sublime diversity of the scenery of the Rocky Mountains to soothe his irritated nerves.

MR. JOHN MURRAY has published a translation by Mr. W. C. Clinton of Dr. L. Bloch's "Science of Illumination," which was reviewed in these columns on March 7 last (vol. lxxxix., p. 3). With the consent of the author, Mr. Clinton has made certain alterations and additions rendered necessary by the difference between the English and German units and standards, and by the lapse of time. The price of the English edition is 6*s*. net.

MR. FRANCIS EDWARDS, bookseller, of 83 High Street, Marylebone, London, W., has issued a catalogue of the geographical library of Mr. Ernest G. Ravenstein. The catalogue includes some 1197 entries of works which he has for sale. Messrs. Bowes and Bowes, 1 Trinity Street, Cambridge, have published a catalogue of books on pure and applied mathematics which they have on sale. The list deals with mathematical histories and dictionaries, mathematical works published before 1700, and works of reference.

OUR ASTRONOMICAL COLUMN.

THE BRAZILIAN ECLIPSE, OCTOBER 10.—We learn from Mr. J. H. Worthington that his private eclipse camp in Brazil was in the same locality as that of the Greenwich observers, and that rain entirely prevented observations. He further states that it would probably have been necessary to travel at least a thousand miles to escape the rain zone on the day of the eclipse.

BORRELLY'S COMET 1912*c*.—Circular No. 137 from the Kiel Centralstelle gives a set of elements and an ephemeris for the comet discovered by M. Borrelly on November 2. From these we see that the comet passed perihelion on October 22, when it was some 103 million miles from the sun, and is now travelling southwards through Hercules towards Aquila; on November 18 it will be about 25 m. east of ε Aquilæ. The distances from both the sun and the earth are increasing, and consequently the calculated magnitude, now 8·7, is decreasing.

In a letter in *The Times* of November 13, Mr. W. S. Franks states that the comet was observed on November 9 at Mr. F. J. Hanbury's observatory, Brockhurst, East Grinstead, with the 6-in. equatorial. "At 8.10 p.m., November 9, its approximate right ascension was 18h. 37m., and declination 27° 33′ N. It was fairly bright, and estimated as of about seventh magnitude, being easily visible in the finder. It was judged to be about 1′ of arc in diameter, gradually brightening to the centre, but without a nucleus."

THE LIGHT-CURVE OF NOVA GEMINORUM, NO. 2.—The results of about 270 magnitude-observations of